

## CLAIMS

We claim:

1. A method for generating imputing econometric variables from corrected raw econometric data, the method comprising:
  - 5        detecting inconsistencies in the raw econometric data;
  - correcting the detected inconsistencies in the raw econometric data to generate a cleansed initial dataset; and
  - generating imputed econometric variables using the cleansed initial dataset.
- 10    2. The method of Claim 1, wherein the imputed econometric variables include imputed variables selected from the group consisting of an imputed base price variable, an imputed relative price variable, an imputed base volume variable, an imputed variable reflecting the effects of stockpiling, an imputed variable reflecting seasonal effects, an imputed variable reflecting day-of-the-week effects, an imputed
   
15    variable reflecting promotional effects, and an imputed cross-elasticity variable.
3. The method of Claim 2, wherein the imputed econometric variables include imputed variables selected from the group consisting of an imputed base price variable, an imputed relative price variable, an imputed base volume variable, an
   
20    imputed variable reflecting the effects of stockpiling, an imputed variable reflecting day-of-the-week effects, an imputed variable reflecting promotional effects, and an imputed cross-elasticity variable
- 25    4. The method of Claim 1, wherein generating of imputed econometric variables includes generating an imputed base price variable.

5. The method of Claim 4, wherein generating of the imputed base price variable comprises:

- defining a time window for analyzing records of the cleansed initial dataset;
- determining an initial base price based on data within the time window; and
- 5 outputting the initial base price as the base price variable.

6. The method of Claim 4, wherein generating of the imputed base price variable comprises:

- defining a time window for analyzing records of the cleansed initial dataset;
- 10 determining an initial base price based on data within the time window;
- determining promotional effects on the initial base price based on data within the time window;
- defining a step function for initial base price based on data within the time window;
- 15 calculating price discount variables;
- outputting initial base price step function and discount variables;
- analyze and correct outputted initial base price variable based on base price distribution data generating a refined base price variable;
- outputting the refined base price variable.

7. The method of Claim 1, wherein generating of imputed econometric variables includes generating an imputed relative price variable.

8. The method of Claim 7, wherein generating of the imputed relative price variable comprises:

- determining equivalent price for price values in the cleansed initial dataset;
- determining equivalent units for units values in the cleansed initial dataset;

calculating values for equivalent base price and equivalent base units;  
determining a weighted equivalent average price;  
determining a weighted equivalent average base price;  
calculating moving averages for relative equivalent price and relative  
5 equivalent base price; and

outputting relative equivalent price and relative equivalent base price as  
relative price variables.

9. The method of Claim 1, wherein generating of imputed econometric variables  
10 includes generating an imputed base volume variable.

10. The method of Claim 9, wherein generating of the imputed base volume  
variable comprises:

analyzing the cleansed initial dataset to determine non-promoted dates;  
15 calculating average sales volume during the non-promoted dates;  
determining an initial units value based on the cleansed initial dataset and the  
calculated average sales volume during the non-promoted dates;  
determining a moving average value for initial units; and  
outputting the moving average value for initial units as the imputed base  
20 volume variable.

11. The method of Claim 1, wherein generating of imputed econometric variables  
includes generating an imputed variable reflecting the effects of stockpiling.

25 12. The method of Claim 1, wherein generating of imputed econometric variables  
includes generating of an imputed variable reflecting day-of-the-week effects.

13. The method of Claim 12, wherein generating of the imputed variable reflecting day-of-the-week effects comprises:

assigning each record of the cleansed initial dataset to a specific day of the week;

5 specifying an input dimension;

summing each assigning record over the specified input dimension;

determining, for each specific day of the week, an average amount of units sold for each day; and

10 determining for each day of the week, using actual daily units sold divided by average amount of units sold for each day, a relative daily volume of units sold variable.

14. The method of Claim 1, wherein generating of imputed econometric variables includes generating of an imputed variable reflecting promotional effects.

15 15. The method of Claim 14, wherein generating of the imputed variable reflecting promotional effects comprises:

using cleansed initial dataset and calculated values for base units, determining crude promotional variable;

20 conducting simple regression analysis to obtain initial volume model;

comparing sales volume results generated by the initial volume model with actual sales volume; and

25 adjusting initial volume model to reflect inconsistencies between the initial volume model and the actual sales volume to generate a corrected volume model which comprises an imputed promotional effects variable.

16. The method of Claim 1, wherein generating of imputed econometric variables includes generating an imputed cross-elasticity variable.

17. The method of Claim 16, wherein generating of the imputed cross-elasticity variable comprises:

- inputting demand group information from the cleansed initial dataset;
- calculating equivalent sales volume for each demand group per time period;
- 5 calculating average equivalent sales volume for each demand group per time period;
- calculating relative equivalent sales volume for each demand group per time period; and
- generating cross-elasticity variables for each demand group.

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18. A method for generating cleansed initial dataset from corrected raw econometric data, the method comprising:

- inputting the raw econometric data;
- formatting and classifying the raw econometric data;
- 15 conducting an initial error detection and correction;
- defining a store data set hierarchy;
- conducting a second error detection and correction;
- defining product attributes and demand groups;
- updating attribute information;
- 20 defining equalizing factors;
- conducting a third error detection and correction;
- subsetting data to facilitate increased processing speeds;
- conducting a fourth error detection and correction; and
- outputting the cleansed initial dataset for use in further processing.

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19. A method for generating cleansed initial dataset from corrected raw econometric data,

wherein conducting the initial error detection and correction comprises:

removing duplicate records from the raw econometric data; and

5 removing records which are inconsistent with client supplied movement data from the raw econometric data;

wherein conducting the second error detection and correction comprises;

removing records having negative value for price, sales volume, or cost from the raw econometric data; and

10 removing records having prices inconsistent with a cross-store price distribution from the raw econometric data;

wherein conducting the third error detection and correction includes:

analyzing data records from closed stores to remove such data records from the raw econometric data; and

15 checking for and correcting discrepant data records;

wherein conducting the fourth error detection and correction includes resolving remaining data inconsistencies concerning price, sales volume, and causal variables.

20 20. A computer-readable medium having programming instructions arranged to generate imputed econometric variables from raw econometric data, the programming instructions including programming instructions for:

receiving the raw econometric data;

detecting inconsistencies in the raw econometric data;

25 correcting the detected inconsistencies in the raw econometric data to generate a cleansed initial dataset; and

generating imputed econometric variables using the cleansed initial dataset.

21. A computer-implemented method for generating imputing econometric variables from corrected raw econometric data, comprising:

- receiving the raw econometric data;
- 5 detecting inconsistencies in the raw econometric data;
- correcting the detected inconsistencies in the raw econometric data to generate a cleansed initial dataset; and
- generating imputed econometric variables using the cleansed initial dataset.